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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,730	06/13/2005	Olivier Guerret	FR-AM1907 NP	6786

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ARKEMA INC.
PATENT DEPARTMENT - 26TH FLOOR
2000 MARKET STREET
PHILADELPHIA, PA 19103-3222

EXAMINER	
BERNSHTEYN, MICHAEL	
ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
03/25/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/538,730	GUERRET, OLIVIER	
	Examiner	Art Unit	
	MICHAEL M. BERNSHTEYN	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/08/2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-11,13 and 17-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *11* is/are allowed.

6)☒ Claim(s) *1,2,4-10,13 and 17-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 June 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action follows a response filed on December 18, 2009. Claims 1, 9, 10, and 19 have been amended; no claims have been cancelled or added.

2. In view of amendment(s) and remarks the objection of the specification and claims 1 and 8-10, and the rejection of claim 19 under 35 U.S.C. 112, 2nd paragraph have been withdrawn.

3. Claims 1, 2, 4-11, 13 and 17-21 are pending.

Claim Rejections - 35 USC § 102

4. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

Claim Rejections - 35 USC § 103

5. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

6. Claims 1, 2, 4-10, 13 and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable as obvious over Nesvadba et al. (U.S. Patent 6,262,206), for the rationale recited in paragraph 3 of Office Action dated October 4, 2007, and comments below.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable as obvious over Nesvadba et al. (U.S. Patent 6,262,206), for the rationale recited in paragraph 6 of Office Action dated March 26, 2008, and comments below.

8. Claims 1, 2, 4-7, 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Matyjaszewski et al. "Gradient copolymers by atom transfer radical polymerization", J. Phys. Org. Chem., 2000, **13**, p. 775-786, for the rationale recited in paragraph 14 of Office Action dated September 8, 2008, and comments below.

9. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matyjaszewski et al. as applied to claims 1, 2, 4-7, 18 and 20 above, and further in view of Farcet et al. “Nitroxide-mediated miniemulsion polymerization of n-butyl acrylate: synthesis of controlled homopolymers and gradient copolymers with styrene”, Macromolecular Symposia (2002), 182, (3rd IUPAC-Sponsored International Symposium on Free-Radical Polymerization: Kinetics and Mechanism), 2001, 249-260 (see SRNT dated on September 19, 2007, pages 48-49), for the rationale recited in paragraph 15 of Office Action dated September 8, 2008, and comments below.

10. Claims 13 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matyjaszewski et al. “Gradient copolymers by atom transfer radical polymerization”, J. Phys. Org. Chem., 2000, 13, p. 775-786, as applied to claims 1, 2, 4-7, 18 and 20 above, and further in view of Matyjaszewski et al. (U. S. Patent 5,807,937), for the rationale recited in paragraph 16 of Office Action dated September 8, 2008, and comments below.

Response to Arguments

1. Applicant's arguments filed December 8, 2008 have been fully considered but they are not persuasive.

2. It appears that the focal Applicants argument resides in the in the contention that the main point of difference between Applicant's claims and the art is that Applicant's unique copolymer has both water and organic solvent solubility, and that this dual solubility was not known or expected from the art, and could certainly not have been predicted (page 10. 3rd paragraph, pages 10-11, the bridging paragraph), it is worth to mention that Nesvadba clearly discloses that the process may be carried out in the presence of **an organic solvent** or in the presence of **water or in mixtures of organic solvents and water** (col. 9, lines 62-66). Furthermore, in view of substantially identical monomers, their weight amounts, the obtained copolymer having a number average molecular weight and a polydispersity within the claimed ranges, between Nesvadba and instant claims, it is the examiner position that Nesvadba's copolymer inherently possesses these properties. Since the USPTO does not have equipment to do the analytical test, the burden is now shifted to the applicant to prove otherwise. ***In re Fitzgerald*** 619 F 2d 67, 70, 205 USPQ 594, 596 (CCPA 1980).

3. In response to Applicants arguments that the Nesvadba's reference teaches a gradient copolymer (col. 12, lines 56-58), though with no teaching or suggestion of how such a gradient polymer might be made (page 9, the last paragraph), it is noted that the most claims recite the copolymer (claims 1, 2, 4-6, 13, 17-19 and 21), not the process. Nevertheless, it is noted that Nesvadba clearly discloses that the present invention encompasses in the synthesis novel **gradient copolymers** (col. 12, lines 56-59). It is well settled that "an applied reference may be relied upon for all that it would have reasonably suggested to one of ordinary skill in the art, including not only preferred

embodiment, but less preferred and even non preferred". *Merck & Co. v. Biocraft Laboratories,* 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989).

4. In response to Applicants arguments that Matyjaszewski's reference fails to teach or suggest all of Applicant's claim elements, thus fails to provide a *prima facie* case of anticipation because the Matyjaszewski's reference fails to teach or suggest that the copolymer have both the claimed Tg and wt%, as well as one monomer being hydrophilic; nor that the resulting copolymer is soluble or dispersible in both water and organic solvent (page 11, 1st paragraph), it is noted that as it was already mentioned in the previous Office action, Matyjaszewski discloses that gradient copolymers have a continuous change in composition from one end of the chain to the other. In order to achieve this continuous change in instantaneous composition, all chains must be initiated simultaneously, and must survive until the end of the polymerization. Therefore, a living (ionic) or controlled/living radical polymerization technique must be employed, as the significant presence of chain-breaking reactions would lead to heterogeneity in both composition and molecular weight (page 775, right column through page 776, left column). Gradient copolymers may be prepared via ATRP copolymerization of two or more monomers with different homopolymerization reactivity ratios (e.g., $r_1 >> r_2$, where r_1 may be greater than 1 and r_2 may be less than 1). As the differences in the two values of reactivity ratio increase, so does the steepness of the gradient in instantaneous composition (pages 777-778). Matyjaszewski exemplifies the simultaneous radical copolymerization of styrene and n-butyl acrylate, and methyl methacrylate and n-butyl

acrylate in bulk at 90-110^{0}C, which is within the claimed range (pages 780-781, Fig. 5-7). Therefore it is the Examiner position that Matyjaszewski's reference anticipates the claimed invention.

5. In response to Applicants arguments that the Matyjaszewski's reference does show gradient copolymers, including the styrene/acrylonitrile (example, page 783, Figure 3) but however, neither styrene nor acrylonitrile is a hydrophilic monomer, thus fails to meet that claim element (page 11, 2nd paragraph), it is noted that "an applied reference may be relied upon for all that it would have reasonably suggested to one of ordinary skill in the art, including not only preferred embodiment, but less preferred and even non preferred". *Merck & Co. v. Biocraft Laboratories,* 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989).

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David Wu/
Supervisory Patent Examiner, Art Unit 1796

/M. M. B./
Examiner, Art Unit 1796